

REDACTED

REBUTTAL TESTIMONY

OF

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Engineering Department
Energy Division
Illinois Commerce Commission

Purchased Gas Adjustment Clause Reconciliation

Illinois Power Company

2001 Purchased Gas Adjustment Clause Reconciliation

Docket No. 01-0701

August 28, 2002

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1 Q. Please state your name and business address.

2 A. My name is Eric Lounsberry and my business address is: Illinois Commerce
3 Commission, 527 East Capitol Avenue, Springfield, Illinois 62701.

4 Q. Are you the same Eric Lounsberry that previously submitted testimony in this
5 proceeding?

6 A. Yes. I previously presented direct testimony in this proceeding, ICC Staff Exhibit
7 2.00, with supporting schedules ICC Staff Exhibit 2.00, Schedules 2.01 through
8 2.04.

9 Q. What is the purpose of your rebuttal testimony?

10 A. My rebuttal testimony responds to the rebuttal testimonies of Illinois Power
11 Company ("IP or "Company") witnesses Mark Peters, Kevin Shipp and Timothy
12 Hower.

13 Q. What recommendations are you making in your rebuttal testimony?

14 A. I continue to recommend that the Commission find the xxxxxxxxx in additional
15 gas supply costs that IP incurred as a result of its decision to reduce the peak
16 day capacity of its Shanghai storage field imprudent. I also continue to support
17 the two adjustments for imprudently incurred gas costs due to the Commission's
18 findings regarding the prior reconciliation period, Docket No. 00-0714. In my
19 direct testimony, I noted that the Commission had found the Company imprudent
20 in Docket No. 00-0714 as a result of its decision to retire the Freeburg propane

facility and its method of selecting certain swing supply reservation contracts. I calculated that IP imprudently incurred gas costs of xxxxxxxxxx and xxxxxxxxxx respectively during the instant reconciliation period as a result of those decisions. Based upon my review of the above topics, I recommend the Commission make a downward adjustment of \$986,000, to IP's 2001 PGA gas costs.

Swing Contracts

Q. Did IP provide testimony to dispute your recommendation to disallow xxxxxx of gas costs due to a continuation of the Commission's finding of imprudence in Docket No. 00-0714 regarding the method IP used to select certain swing supply reservation contracts?

A. Yes. IP provided the testimony of Mr. Mark Peters, IP Exhibit 2.1.

Q. What did Mr. Peters state in his rebuttal testimony?

A. Mr. Peters' testimony discussed the two swing contracts that the Commission found imprudent in Docket No. 00-0714. The two contracts were a Dynegy Marketing and Trade ("Dynegy") swing contract and a swing city-gate contract. In the instant proceeding I am recommending a disallowance of \$xxxxxxx for the swing city-gate contract.

Q. Briefly summarize the events related to the Commission's imprudence finding for the two swing contracts in Docket No. 00-0714.

40 A. The Commission's Order in Docket No. 00-0714 agreed with my assessment that
41 IP's contract selection criteria that chose gas supply contracts solely on the basis
42 of reservation costs was imprudent and that IP should also consider commodity
43 cost differences between competing bids when it selects its gas supply contracts.

44 The two contracts in question provided gas supplies to IP from November 2000
45 through March 2001. My testimony in Docket No. 00-0714 noted that IP had
46 incurred additional gas supply costs as a result of signing those two contracts
47 versus the next best alternative for the months of November and December of
48 2000.

49 Q. What were Mr. Peters' comments regarding the Dynegy contract?

50 A. Mr. Peters correctly noted that the Commission made a disallowance associated
51 with the Dynegy contract in Docket No. 00-0714 for the period November 2000
52 through December 2000. Mr. Peters then stated that in the instant reconciliation
53 period for the period January 2001 through March 2001 this contract did not
54 cause IP to incur any additional gas costs. Also, looking at the full term of the
55 Dynegy contract, November 2000 through March 2001, Mr. Peters noted that IP
56 did not incur any additional costs due to its selection of this contract versus the
57 next best alternative. Mr. Peters' IP Exhibit 2.2 notes that looking at the full term
58 of the Dynegy contract, IP saved xxxxx versus selecting the next best alternative
59 contract.

60 Mr. Peters then claimed that I transformed IP's single decision to enter in the
61 Dynegy contract into two distinctly separate decisions for prudence review.

Finally, Mr. Peters claimed that the net benefit of the Dynegy contract must be considered in the calculation of any disallowance for swing contracts in this proceeding and in fact that IP should be allowed to recover the amount previously disallowed within 00-0714 during this reconciliation period.

Q. Do you agree with Mr. Peters' statements?

A. Yes and no. I agree an adjustment was made in Docket No. 00-0714 for additional cost that IP incurred as a result of signing this contract for the period November through December 2000. I also agree that IP's calculation shows that when considering the full term of the contract, IP did not incur any additional gas costs.

I also agree that the costs incurred as a result of the Dynegy contract are broken down into two distinct prudence evaluations. However, the use of two different evaluation periods is a result of the start and end date of IP's Purchased Gas Adjustment ("PGA") clause reconciliation and Mr. Lounsberry's understanding of the rules that govern a PGA reconciliation.

Q. Do you agree that the net benefit of the Dynegy contract must be considered in the calculation of any disallowance for swings contracts within this proceeding and that IP should recover the amount previously found imprudent in Docket No. 00-0714 in this reconciliation period?

A. No. My disallowances are based upon the cost incurred within the applicable reconciliation periods. I am not aware of any rule or practice that would allow for

a recalculation, in the manner requested by IP, of events that occurred in a past reconciliation to a different reconciliation period. Further, I would note that to the best of my knowledge IP was not precluded from bringing up the issue of looking at the Dynegy contract's full term impact in Docket No. 00-0714. The Company's rebuttal and surrebuttal testimony that responded to my testimony about manner in which IP selected its swing contracts in Docket No. 00-0714 were filed after the Dynegy contract expired in March of 2001.

Q. What did Mr. Peters' testimony note about the second swing contract that was at question in Docket No. 00-0714?

A. Mr. Peters claimed that by performing the test put forth in my testimony from Docket No. 00-0714, IP would have selected the second swing contract; therefore it should not incur any prudence disallowance from that contract in the instant proceeding.

Q. Do you agree with Mr. Peters' statements about the second swing contract, which you found IP incurred \$xxxxxx of imprudent gas costs during the instant reconciliation period?

A. No. First, I would note that the test that Mr. Peters prescribes to me was in fact a statement of the load factors IP incurred for its swing contracts for the winter season of 1999-2000 and 2000-2001, which demonstrated that it was improper to assume no gas usage when determining the appropriate firm swing contract to select. Also, my rebuttal testimony in Docket No. 00-0714, pages 23-24 noted

that “[p]rior to accepting firm bids that include commodity price differences with other offered bids, IP, at a minimum, should investigate a break-even usage rate or load factor that those contracts would require in order for the commodity rate difference to enter into the equation.” Further, the Commission, in its Order in Docket No. 00-0714, page 34, noted, in part, the following:

While it may be difficult to estimate the amount of gas that will be taken under any particular swing contract, IP’s selection criterion wrongly assumes that no gas will be taken. When IP entered into the swing contracts for the 2000-2001 winter season, it knew that it purchased gas under each of its swing contracts for the 1999-2000 winter season at the load factors listed in the preceding paragraph. The Commission does not find that Staff’s method for considering the commodity costs is the only or best way to do so. Rather, based upon the evidence, the Commission finds the Staff’s method is more reasonable than ignoring such costs.

I also note that IP, for the same reasons stated above with regard to the Dynegy contract, was not precluded from providing information about this particular contract for its full November 2000 – March 2001 term. Finally, based upon the information provided in 00-0714, the Commission found the Company’s decision to enter into this contract imprudent. Therefore, I continue to support my adjustment that IP incurred \$xxxxxx in imprudent gas costs as a result of this contract in the instant proceeding.

Shanghai Reduced Peak Day Capacity

Q. Did IP provide rebuttal testimony regarding your contention that IP was imprudent for reducing the peak day capacity of its Shanghai storage field?

129 A. Yes. IP provided the rebuttal testimonies of Kevin Shipp, IP Exhibit 3.3, and
130 Timothy Hower, IP Exhibit 5.0.

131 Q. Please summarize the conclusions you reached regarding IP's reduction of the
132 peak day capacity of its Shanghai storage field.

133 A. I noted on pages 22 through 24 of my direct testimony that IP should have
134 identified and acted upon potential deliverability problems at the Shanghai
135 storage field prior to encountering the need to reduce the peak day capacity of
136 the field. I also summarized seven points in support of my opinion.

137 1. IP knew that wells at aquifer storage fields experience deliverability
138 declines.

139 2. IP did not make use of hysteresis curves to monitor its storage field.

140 3. IP did not discover a metering error until a problem was found at another
141 field.

142 4. IP did not capitalize upon observations from monitoring wells.

143 5. IP waited more than a year to replace gas misaccounted for due to the
144 metering error.

145 6. IP's failure to replace gas misaccounted for due to the metering error may
146 have contributed to a well at Shanghai developing a sanding problem.

147 7. IP last took action to maintain the Shanghai field's deliverability in 1994.

148 I also made four observations regarding IP's overall storage operations.

149 1. It is uncommon for a utility to reduce the peak day capacity of a storage
150 field.

151 2. IP reduced manpower levels associated with oversight of its storage fields.

152 3. IP reduced its capital spending amounts.

153 4. IP's ability to identify the root cause of problems and therefore its ability to
154 correct those problems is poor.

155 **Storage Field Deliverability Declines**

156 Q. What did you state in your direct testimony regarding storage field deliverability
157 declines?

158 A. I noted that IP, in its response to Staff data request ENG 2.112, provided a study
159 that noted downhole damage in wells could cause a deliverability decline of 3 to
160 5% a year in wells. I also noted that since IP reperforated wells at Shanghai in
161 the past, IP knew the potential existed for well deliverability at Shanghai to
162 decline over time.

163 Q. What did IP's witnesses state regarding your above statements?

164 A. IP witnesses did not dispute my statement. In fact, in response to Staff data
165 request ENG 2.203, Mr. Hower noted that the decline in storage field
166 deliverability was known in the United States as well as overseas.

167 **Hysteresis Curves**

168 Q. What did you state in your direct testimony regarding hysteresis curves?

169 A. I noted that my understanding was that hysteresis graphs were an industry
170 standard for monitoring the performance of storage fields and that reference
171 material IP provided noted that parallel hysteresis loops on a hysteresis graph
172 could be indicative of a decline in the productivity of withdrawal wells in aquifer

173 gas storage reservoirs. I also noted that IP had not plotted the hysteresis graphs
174 for its storage fields in order to ascertain the productivity of its withdrawal wells or
175 to possibly identify other problems in the field. Finally, I stated that I believed had
176 IP made use of this important diagnostic tool, it could have identified problems at
177 the Shanghai storage field much sooner and without incurring the need to reduce
178 the peak day deliverability of its storage field.

179 Q. How did IP respond to your statements on hysteresis curves?

180 A. On page 10 of his rebuttal testimony, Mr. Shipp noted that hysteresis graphs are
181 another tool to monitor and verify inventory. Mr. Shipp also commented that
182 since the incorrect inventory levels were not recognized until 2000, the data IP
183 would have used to make these plots would have been incorrect and only shown
184 an incorrect plot. Mr. Hower, on pages 14 and 15 of his rebuttal testimony, noted
185 that he would disagree with any implications that hysteresis plots are a technique
186 for monitoring gas storage reservoirs that is preferred to other methods that he
187 discussed in his testimony. Mr. Hower also noted that he believed a prudent
188 storage operator should rely on numerous methods to monitor its inventory and
189 not rely only on one method.

190 Q. Did you recommend that IP rely only on one method to monitor its storage field?

191 A. No. My testimony stated that IP should have also plotted hysteresis graphs to
192 monitor its storage operations. In fact, when I met with IP on June 11, 2001, IP
193 personnel said that they intended to start plotting hysteresis graphs again.

194 Q. Did IP disagree with your contention that hysteresis graphs are an industry
195 standard?

196 A. Mr. Shipp's and Mr. Hower's rebuttal testimonies do not dispute my statement,
197 however, in response to Staff data request ENG 2.210 Mr. Hower notes that
198 hysteresis plots are widely used, but that their use is by no means universally
199 accepted.

200 Q. Do you still believe that IP should plot the hysteresis curves for its storage fields?

201 A. Yes, especially, the Shanghai storage field.

202 Q. Why do you believe IP should plot the hysteresis curves for its Shanghai storage
203 field?

204 A. Mr. Shipp, on page 4 of his rebuttal testimony, noted that weather and gas
205 consumption, or the lack thereof, have a substantial impact on the Company's
206 ability to diagnose, correct and verify any changes in the Shanghai field's
207 deliverability because it services a captive load. If the Company is not
208 experiencing a normal or severe winter season, the load at Shanghai will not be
209 adequate enough to fully test any changes made to the field during the prior
210 period. Given the limitations that Mr. Shipp attributes to IP's ability to monitor the
211 Shanghai field, it makes sense that IP should use all reasonably available
212 monitoring tools, such as hysteresis curves.

213 Q. Do you continue to believe that had IP made use of this important diagnostic tool,

214 it could have identified problems at the Shanghai storage field much sooner and
215 without incurring the need to reduce the peak day deliverability of its storage
216 field.

217 A. Yes.

218 **Undiscovered Metering Error**

219 Q. What did you state in your direct testimony regarding the metering error that
220 caused the misaccounted for gas?

221 A. My testimony noted that based on a meeting I had with IP personnel on June 11,
222 2002, my understanding was that IP did not find the metering error at Shanghai
223 that caused xxxxxx of the Shanghai field top gas to be misaccounted until it had
224 found an error with the metering at Hillsboro and then IP decided to also check
225 the metering at Shanghai to ensure no errors occurred there as well. During the
226 course of this review, IP found the problem at Shanghai.

227 Q. What did IP's testimony note regarding the discovery of the metering error at
228 Shanghai?

229 A. Mr. Shipp's rebuttal testimony, pages 11 through 13, noted that IP, in a winter
230 operations review meeting after the season of 1998-1999, decided to initiate a
231 review of all storage fields for accuracy and deliverability to address certain
232 issues that had been noticed in the prior winter. Further, in response to Staff
233 data request ENG 2.168, the Company noted that IP requested this review as

234 part of its efforts to identify causes of lost deliverability at Shanghai. Finally, IP
235 noted during the June 11 meeting between myself and IP personnel, the IP
236 employee simply expounded on the fact all metering was being checked and that
237 a problem with the orifice metering at Hillsboro was identified prior to checking
238 the metering at Shanghai and that I misunderstood why IP checked the metering
239 at Shanghai after finding a problem at Hillsboro.

240 Q. Does IP's testimony resolve all of your concerns regarding the manner in which
241 the metering error was discovered?

242 A. No. IP disputes my understanding of the information that I received at the June
243 11 meeting with IP personnel. However, IP provides two different versions for
244 why the information I provided in my direct testimony about the June 11 meeting
245 is incorrect. First, IP, in response to data request ENG 2.168 states the review
246 was done to identify causes of lost deliverability at Shanghai. Then Mr. Shipp, in
247 his rebuttal testimony, states the review was done as a result of a winter
248 operations review meeting after the season of 1998-1999.

249 Based upon my understanding about the above information, IP was concerned
250 with Shanghai's deliverability, but checked the Hillsboro metering first. I would
251 expect that if IP had concerns with the Shanghai storage field, it would check the
252 metering at Shanghai first rather than Hillsboro. Given the information I have
253 available at this time, it does not make sense for IP to check the Hillsboro
254 storage field's metering first. In an attempt to resolve this concern, I have
255 requested copies of notes taken during the winter operations review meeting

256 discussed above to clarify this topic, but this response will not arrive until after my
257 rebuttal testimony is filed. Therefore, IP should also attempt to clarify this topic in
258 its surrebuttal testimony.

259 **Monitoring Well Observations**

260 Q. What did you state in your direct testimony regarding the monitoring well
261 observations?

262 A. I noted that based upon the information that I discussed with IP personnel at the
263 June 11, 2002 meeting, IP had failed to capitalize upon or make use of the
264 observation that gas was not being detected or observed in the monitoring wells
265 at Shanghai. I also stated that, at a minimum, IP should have investigated
266 potential problems at the storage field prior to its discovery of a metering error at
267 the field. I also noted that the information provided to me by the Company in
268 response to Staff data request ENG 2.170, which noted that there were no years
269 in which natural gas was not detected within monitoring wells (also called
270 observations wells), versus the discussion I had with IP personnel at the June 11
271 meeting was not consistent.

272 Q. What did IP's testimony note regarding your statements?

273 A. Mr. Shipp, on page 13 of his rebuttal testimony, noted that the response IP
274 provided within ENG 2.170 was accurate. However, he pointed out that the
275 question I asked in ENG 2.170 would not reveal information about the topic that
276 was discussed at the June 11 meeting, due to possibly a misunderstanding

277 regarding the phrase “go to gas.” Mr. Shipp further stated that whether you
278 detect gas at the monitoring well or not, it is not indicative of having a
279 deliverability problem. Aside from that comment, neither Mr. Shipp nor Mr.
280 Hower addressed my comments regarding IP potentially making use of the fact
281 that observation wells did not “go to gas”.

282 Q. What does the phrase “go to gas” mean?

283 A. Mr. Shipp, on pages 13 and 14 of his rebuttal testimony, noted that IP’s definition
284 of “go to gas” is that there is a much higher gas saturation at the well head. At
285 that time, IP valves the well off so that natural gas is not venting to the
286 atmosphere.

287 Q. Do you continue to believe the failure of monitoring wells to “go to gas” should
288 have prompted some action by IP?

289 A. Yes.

290 Q. Do you have any information regarding when IP was aware of the failure of
291 observation wells at Shanghai to “go to gas”?

292 A. Yes. The Company’s response to Staff data request ENG 2.177, Attachment 1,

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301 Q. What does the final report note on this topic?

302 A. I was not provided with a final report. I have requested one, should one exist, as
303 well as an explanation of why a final report would not exist, but that will not arrive
304 until after I file my rebuttal testimony. Therefore, I request that IP address the
305 existence of a final report and its contents in its surrebuttal testimony.

306 Q. Do you continue to believe that IP could have acted upon the knowledge that the
307 monitoring wells at Shanghai were no longer going to gas?

308 A. Yes.

309 **Delay in Replacing Misaccounted for Gas**

310 Q. What did you state in your direct testimony regarding about the Company's delay
311 in replacing the misaccounted for gas?

312 A. I noted that once IP identified the metering error, the Company delayed for more
313 than one year the replacement of the majority of the gas misaccounted for due to
314 the metering error. I also noted that the inexplicable delay in replacing the
315 misaccounted for gas may have contributed to the subsequent deliverability
316 problems with the Shanghai storage field.

317 Q. What did IP's witnesses state regarding your above statements?

318 A. Mr. Shipp, on page 9 of his rebuttal testimony, noted that during the late 1980's
319 IP only had a total inventory in the field of 10 BCF, which was 11.3% less than
320 the 2001 inventory of 11.3 BCF and did not experience deliverability problems.
321 Mr. Shipp also noted, on page 14, that based on historical load patterns, IP did
322 not see the purpose of injecting additional gas, which would not be able to be
323 retrieved based on limited demand.

324 Mr. Hower noted on page 22 of his rebuttal testimony that he did not agree with
325 my conclusion that the failure to replace the gas in a timely fashion may have
326 contributed to the subsequent deliverability problems. Mr. Hower stated that the
327 deliverability of a gas storage field is related to the gas inventory simply because
328 it is a function of pressure. Therefore, with respect to deliverability, it does not
329 matter if there was a delay in replacing any gas lost in the reservoir, any drop in
330 reservoir pressure would be restored and along with it, the field deliverability.

331 Q. Do you agree with the Company witnesses' statements?

332 A. No. I generally agree with Mr. Hower that deliverability of a storage field is
333 related to gas inventory because it is a function of pressure. However, the
334 problems at Shanghai are more complex than that. In fact, I believe the 2001
335 Shanghai Report contradicts the statements made by the Company witnesses.

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342 Q.

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365 X

366 Well Developing a Sanding Problem

367 Q. What did you state in your direct testimony regarding one of the Shanghai
368 storage field's wells developing a sanding problem?

369 A. I noted that the Company's failure to replace the gas lost due to a metering error
370 might have contributed to one of Shanghai's wells developing a sand production
371 problem, since none of Shanghai's wells in the past had developed a sanding
372 problem.

373 Q. What was IP's response to your statement?

374 A. Mr. Hower, on pages 22 and 23 of his rebuttal testimony, noted that he was not
375 aware of any theoretical basis or field examples where a reduced gas inventory
376 was identified as a cause of sand production in storage wells. He further stated
377 that in his opinion a reduced gas inventory would actually tend to prevent sand
378 production problems rather than cause them.

379 Q. How long has the Shanghai storage field operated?

380 A. Mr. Hower's rebuttal testimony, page 7, noted the Shanghai storage field has
381 operated for approximately 33 years.

382 Q. Did Mr. Hower state what he thought may have caused a well at the Shanghai
383 storage field to develop a sanding problem for the first time after 33 years of
384 operation?

385 A. No.

386 Q. Did Mr. Hower dispute your statement that a well at the Shanghai storage field
387 developed a sanding problem after the field was operated with a reduced level of
388 gas inventory?

389 A. No.

390 Q. Do you have any additional information regarding a linkage between the reduced
391 inventory levels at the Shanghai storage field and one of its wells developing a
392 sanding problem?

393 A. Yes. XX

394 XX

395 XX

396 XX

397 Q. What is drawdown pressure?

398 A. The drawdown pressure is the difference between the pressure in the storage
399 reservoir and the surface.

400 Q. Why do you believe the drawdown pressure may be related to the sanding
401 problem at Shanghai?

402 A. During my June 11, 2002 meeting with IP, XX
403 XX
404 x
405 XX
406 XX
407 xx
408 XX
409 XX
410 XX
411 XX
412 XX

413 In response to Staff data request ENG 2.183, IP noted the Shanghai storage field
414 drawdown limit is 150 psi. This response also noted that this limit is a guide for
415 the gas controllers to monitor what the field is doing and that the gas storage
416 engineer and technical staff can and do make the decision to exceed the limits if
417 the field is being monitored by field personnel. Finally, Attachment 1 to the
418 Company's response to ENG 2.183 provided a listing for each hour of each day
419 from 1999 through 2001 that the drawdown pressure of 150 psi was exceeded.
420 This attachment noted approximately 1,200 occurrences when the drawdown
421 pressure was exceeded.

422 Q. What does the above information tell you?

423 A. IP's Hillsboro storage field, with a history of sanding production problems has a
424 set drawdown pressure that cannot be violated. However, the Shanghai storage
425 did not operate under such stringent constraints. Also, IP was operating the field
426 at reduced inventory levels and was having water production problems at some
427 wells. Based upon this information, I continue to believe that the sanding
428 problem that occurred at the Shanghai field might be related to IP's failure to
429 replace the gas misaccounted for due to the meter error in a timely fashion.

430 **Past Actions to Maintain Shanghai Deliverability**

431 Q. What did you state in your direct testimony regarding IP's past actions to
432 maintain Shanghai storage field's deliverability?

433 A. I noted that the last occasion that IP took action to maintain the Shanghai storage
434 field's deliverability was a casing repair and two well perforations in 1994. This
435 information came from the Company's response to Staff data request ENG
436 2.112.

437 Q. What was IP's response to your statement?

438 A. IP did not directly reply to my statements on this topic. However, Mr. Shipp on
439 pages 7 and 8 of his rebuttal testimony provided a listing by year for the period
440 1993 through 2002 of the specific enhancements and studies that IP has
441 performed on Shanghai.

442 Q. Did Mr. Shipp's testimony indicate if any of the projects he listed were
443 undertaken to enhance or maintain the deliverability of the Shanghai storage
444 field?

445 A. No. However, Mr. Shipp, on page 6 of his rebuttal testimony, did indicate that IP
446 had "initiated numerous projects to circumvent potential problems while trying to
447 ensure the maximum deliverability rating". Therefore, to avoid any confusion
448 between the information the Company provided in response to Staff data request
449 2.112 and Mr. Shipp's rebuttal testimony, I request IP clarify what specific actions
450 it has undertaken since 1993 to maintain the Shanghai storage field's
451 deliverability.

452 Q. What was the significance of the 1994 date that IP provided to you as the last
453 date it had taken action to maintain the deliverability of Shanghai?

454 A. Since IP had not performed any work on a well bore at the Shanghai storage field
455 since 1994 and given the potential 3-5% degradation per year in well
456 performance, I could have expected the potential for a deliverability decline at
457 wells with downhole damage in the range of 21 to 35 percent.

458 **Conclusion**

459 Q. Did IP's rebuttal testimony cause you to change your opinion regarding any of
460 the seven reasons you listed in your direct testimony as reason why the
461 Company's decision to reduce the peak day capacity of its Shanghai storage field
462 was imprudent?

463 A. No. In fact, based upon the information that I received from the Company as a
464 result of its rebuttal testimony, I am only more convinced that IP should have
465 identified and acted upon the potential deliverability problems prior to
466 encountering the need to reduce the peak day capacity of the field. Further, I
467 believe the 2001 Shanghai Report in some instances contradicts the conclusions
468 reach by IP's own witnesses in this proceeding.

469

469 **Overall Storage Concerns**

470 **Uncommon to Reduce Peak Day Capacity**

471 Q. What did you state in your direct testimony regarding the reduction of peak day
472 capacity in a storage field?

473 A. My direct testimony noted that it was uncommon for a utility to reduce the peak
474 day capacity of its storage fields, yet IP had reduced the peak day capacity of
475 both of its largest storage fields.

476 Q. What did IP say in response to your above statement?

477 A. Mr. Hower, on pages 9 and 10 of his rebuttal testimony, noted that he did not find
478 it unusual that IP had reduced the peak day capacity of the Shanghai storage
479 field. He also said that in his experience storage field operators are constantly
480 working to minimize the natural degradation that incurs in aquifer reservoirs over
481 time.

482 Q. Was Mr. Hower aware of any other entities that had reduced the peak day
483 capacity of their storage fields?

484 A. Apparently not. Staff data request ENG 2.205 asked Mr. Hower if he knew of
485 any other storage field operator that had reduced the peak day capacity of its
486 storage fields and specifics about each instance. Mr. Hower's response
487 referenced his response to ENG 2.203. The response to ENG 2.203 contained a
488 series of articles about various aspects of natural gas storage. However, I did

489 not note any articles that dealt with any storage field operator reducing the peak
490 day capacity of its storage field.

491 **Reduction in Manpower Levels**

492 Q. What did you state in your direct testimony regarding a reduction in manpower
493 levels associated with IP storage fields?

494 A. My direct testimony noted that IP had reduced the manpower levels associated
495 with the oversight of its storage fields.

496 Q. What was IP's response to your statement?

497 A. IP did not disagree that there were fewer storage field supervisors, but Mr. Shipp,
498 on page 17 of his rebuttal testimony, noted that in 1995, IP adopted a manpower
499 plan that instituted a self-directed work team philosophy. This plan included a
500 reduction in supervisory positions, but at the same time upgraded one of the
501 operation's positions to foreman. Mr. Shipp, on pages 17 and 18 of his
502 testimony, then noted the various courses or conferences the storage operators
503 attended to increase their level of expertise.

504 Mr. Shipp also noted, on pages 18 and 19 of his rebuttal testimony, that the
505 concept of the self-directed work teams is a group of individuals that have the
506 same duties and responsibilities as everyone else within the group. This group is
507 responsible and accountable for the functions that are performed at the field. Mr.

508 Shipp then referred to the concept with the adage that two heads are better than
509 one.

510 Q. Did your review in this proceeding involve a comparison of IP's actions pre-self-
511 directed work team versus post-self-directed work team at its storage fields?

512 A. No. My review simply noted that IP had reduced the number of supervisors at
513 the storage field from a maximum of four individuals in 1991 to the one individual
514 at the beginning of 2000. However, I would note that much of the activities that
515 lead up to IP's decision to reduce the peak day deliverability at Shanghai
516 occurred while under the self-directed work teams.

517 **Reduction in Capital Spending**

518 Q. What did your direct testimony note regarding the Company's level of capital
519 spending associated with its storage operations?

520 A. I noted in my direct testimony that based upon the five years of data provided,
521 the Company had reduced the level of capital expenditures below historical levels
522 while keeping operations and maintenance expense fairly constant for a
523 considerable amount of time. I also noted that this might indicate that the
524 Company is being reactive rather than proactive when determining when to make
525 upgrades or other improvements at its storage fields.

526 Q. How did IP respond to your comments?

527 A. Mr. Shipp, on pages 23 through 25 of his rebuttal testimony, discusses IP's
528 commitment to storage. Mr. Shipp noted that IP continues to invest capital
529 dollars, as deemed necessary, to support its gas storage fields. Mr. Shipp also
530 noted that my analysis used the two highest budget years to compare to the two
531 years with the lowest costs. Mr. Shipp stated that the two years with the highest
532 costs were much larger due to specific large budgeted projects that needed to be
533 performed.

534 Mr. Shipp also provided a list of various operations and maintenance and capital
535 projects that IP has funded since 1993. The confidential version of Revised IP
536 Exhibit 3.4, also notes the amount spent on those specific capital projects for
537 each year.

538 Mr. Hower, on page 21 of his rebuttal testimony, noted that IP had re-perforated
539 all eight injection/withdrawal wells at Shanghai in the 1990's, performed a study
540 that compared neutron logs in 1998, and most recently retained Halliburton
541 Energy Services ("Halliburton") in 2001 to perform numerous deliverability tests
542 and well enhancement treatments as examples that IP has been proactive in
543 past years in attempting to maintain the deliverability of its aquifer storage fields.

544 Q. Where you able to use the information from IP's Revised Exhibit 3.4 to provide a
545 longer term evaluation of IP's capital budget?

546 A. No. I did add all of the capital project cost together for each year to see if a
547 longer term analysis could be conducted, but I noticed that I was not getting a

[illegible]

550

[illegible]

552 could not make any meaningful use of the information provided by IP Revised IP
553 Exhibit 3.4.

554 Q. Do you agree with the comments made by Mr. Hower regarding how proactive IP
555 was with regard to the Shanghai storage field?

556 A. No. I have not reviewed information prior to or during the time frame when IP
557 decided to re-perforate Shanghai's wells in the early 1990's, so I cannot state
558 whether that was or was not proactive. However, the 1998 report that I have
559 regarding Shanghai was a report on the historical gas leakage from that field and
560 dealt with the topic of whether or not IP was convinced that gas was no longer
561 leaking from the field. I do not see how performing this study is considered
562 proactive; instead it was a necessary study to ensure IP had corrected a leak at
563 Shanghai.

564 Finally, IP's hiring of Halliburton came after it had reached the conclusion that it
565 needed to reduce the peak day capacity of the Shanghai storage field. My direct
566 and rebuttal testimony outline why IP was not proactive in identifying problems
567 with Shanghai. The hiring of Halliburton after ignoring other problems that I have
568 detailed cannot be considered proactive.

569 **Root Cause Analyses**

570 Q. What did your direct testimony conclude regarding the Company's ability to
571 perform root cause analyses?

572 A. My direct testimony noted that events surrounding the reduction in the peak day
573 capacity of the Shanghai storage field and the Hillsboro Incident discussed on
574 pages 31 through 38 of my direct testimony indicate poor oversight by the
575 Company in its ability to identify and act upon problems facing its storage
576 operations. This also calls into question IP's ability to operate its storage
577 operations in a safe, reliable, and efficient manner.

578 Q. How did IP respond to the above statements?

579 A. Mr. Shipp, on pages 20 through 22 and pages 25 through 27 of his rebuttal
580 testimony, noted the various reasons why he believes IP operate its storage
581 fields in a safe, reliable, and efficient manner. Mr. Shipp also copied the
582 definitions I provided in response to Company data request 59 for the terms
583 "safe", "reliable", and "efficient" on an individual basis.

584 Specifically, Mr. Shipp's rebuttal testimony discusses how the Company relies
585 upon its storage fields for peak day supplies; how improved automation and
586 remote control of control systems has improved efficiencies; that IP has only
587 received one non-compliance at its storage fields in the last 10 years; how it
588 safely shut down the Hillsboro storage field after the events involved in the
589 Hillsboro Incident discussed in my direct testimony; and how IP was able to

590 restore the Hillsboro storage field to 65% deliverability within five days of incident
591 and to 100% deliverability within five weeks of the incident.

592 Q. Do you disagree with any of the information that Mr. Shipp provided regarding
593 the above statements?

594 A. No.

595 Q. Do you agree with the manner that Mr. Shipp assumed you used the phrase
596 “safe, efficient, and reliable” in your direct testimony?

597 A. No. Mr. Shipp uses each term individually, however, my testimony uses those
598 terms as a complete phrase.

599 Q. Why did you use the phrase “safe, efficient, and reliable” in your direct
600 testimony?

601 A. I used this phrase because that was the terminology that IP used in its response
602 to Staff data request ENG 2.149. This response noted in relevant part that: xxxx

603

604 x

[illegible]

606 X

[illegible]608 **x**[illegible]

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Q. Do you still believe that your review indicated that the Company's ability to identify and therefore act upon problems facing its storage operations is poor and that this also calls into question IP's ability to operate its storage operations in a safe, reliable, and efficient manner?

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618

A. Yes.

619

Conclusion

620

Q. Did IP's rebuttal testimonies cause you to change your opinion regarding any of the four reasons you listed in your direct testimony as overall concerns you had regarding IP's storage operations?

621

622

623

A. No.

624

New Items Brought Up by IP

625

Q. In addition to responding to the specific points of your direct testimony, did IP's witnesses bring up related topics that are not addressed above?

626

627

A. Yes. Mr. Shipp discussed the difficulty that IP faces with monitoring the Shanghai storage field and a past leak at Shanghai. Mr. Hower discussed the expected life of a storage field.

628

629

630 **Shanghai Serves Captive Load**

631 Q. What did Mr. Shipp say regarding IP's ability to monitor its Shanghai storage
632 field?

633 A. Mr. Shipp, on page 4 of his rebuttal testimony, noted that weather and customer
634 consumption will have substantial impact on the Company's ability to diagnose,
635 correct and verify any changes to a storage aquifer's characteristics. Particularly,
636 in the case of Shanghai, if the Company and its customers are not experiencing
637 a normal to severe winter season, the load that Shanghai serves will not be
638 adequate to fully test the field. This happens because the field only serves the
639 immediate area around the field and load cannot be created to test the field.

640 Q. Do you agree with Mr. Shipp's statement?

641 A. Yes and no. I agree that the Shanghai storage field is load constrained to just
642 meet local demand. However, I do not agree that this necessarily limits IP ability
643 to test individual well deliverability at the field. The Shanghai storage field
644 contains eight injection/withdrawal wells. IP has the option to close the valve on
645 each well, in essence turning them off, to test the operation of the other wells. In
646 fact, IP's response to Staff data request ENG 2.160 noted that Halliburton
647 conducted a study of well performance at Shanghai in late summer of 2001.
648 Since Halliburton was able to conduct individual well tests, I fail to see why IP
649 could not have done something similar. Therefore, IP could have performed
650 individual well deliverability tests prior to encountering the need to reduce the

651 peak day capacity of the Shanghai storage field.

652 **Prior Leak at Shanghai**

653 Q. What did Mr. Shipp indicate regarding a leak at Shanghai?

654 A. Mr. Shipp, on page 12 of his rebuttal testimony and in response to Staff data
655 request ENG 2.185, indicated that IP detected a casing leak at Moberg #1 in the
656 1990-1992 time frame. Work was done in 1992 to stop the leak and in 1994 the
657 well casing that caused the leak was replaced. The amount of the suspected
658 leakage was 661,000 Mcf.

659 During the period 1995 through 1999, IP injected additional gas to make up for
660 the gas lost due to the casing leak. Mr. Shipp noted that the size of the injection
661 due to the casing leak was similar to the size of the gas misaccounted for due to
662 the meter error, which made it difficult to identify the gas lost due to the metering
663 error. Finally, in response to Staff data request ENG 2.185, IP noted that gas
664 was injected over the five-year period to avoid pushing gas off structure.

665 Q. Why did IP spread the injections to replace the gas lost due to the casing leak
666 over a five-year period?

667 A. According to the Company's response to Staff data request ENG 2.185, the gas
668 was injected over that time frame to avoid pushing gas off structure and not
669 being able to recover it.

670 Q. What information did you review regarding this leak?

671 A. I reviewed the 2001 Shanghai Report as well as the June 18, 1998 study on the
672 Shanghai leak that was provided in the Company's response to Staff data
673 request ENG 2.177, Attachment 2. These reports confirm the information
674 provided above by Mr. Shipp.

675 Q. Do these reports provide any further information?

676 A. Yes. XX
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686 XX

687 **Storage Field Life**

688 Q. What did Mr. Hower note about the life of a storage field?

689 A. Mr. Hower noted on page 7 of his rebuttal testimony that a gas storage field has
690 an expected life of 30 to 50 years. In response to Staff data request ENG 2.204,
691 he noted that "expected life" was meant to refer to the period of time where the

692 operation of a gas storage field remains economically attractive to the operator.

693 Q. Do you agree with the estimate of 30 to 50 years on the life of a storage field?

694 A. No. My understanding is that the first storage fields were developed in Illinois in

695 the mid to late 1950s and that most storage fields currently operating in Illinois

696 were placed into operation in the time frame of late 1950s through early 1970s.

697 Using Mr. Hower's statement many of the storage fields located in Illinois should

698 face retirement in the near future. However, aside from IP retiring its smallest

699 storage field last year, I am not aware of a utility retiring a storage field.

700 **Conclusion**

701 Q. Did the Company's rebuttal testimony persuade you that your proposed

702 adjustment regarding the Company's decision to reduce the peak day capacity of

703 its Shanghai storage field was improper?

704 A. No.

705 Q. Does this conclude your rebuttal testimony?

706 A. Yes.